

Synoptic Engineering Overview

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Experience

- Small business of five researchers with decades of experience as PM/PI on >\$100M in funded R&D work
- Primary customers have been DARPA, DoD service labs, and IC
- Rich history of demonstrating new technologies in the field

Recent Research Areas

- Distributed RF arrays for communications, EW, and radar
- Centimeter-scale ranging and picosecond-scale clock sync. between radios
- GPS-free navigation
- Overwater RF propagation
- Linguistics processing and machine learning

Societal Missions

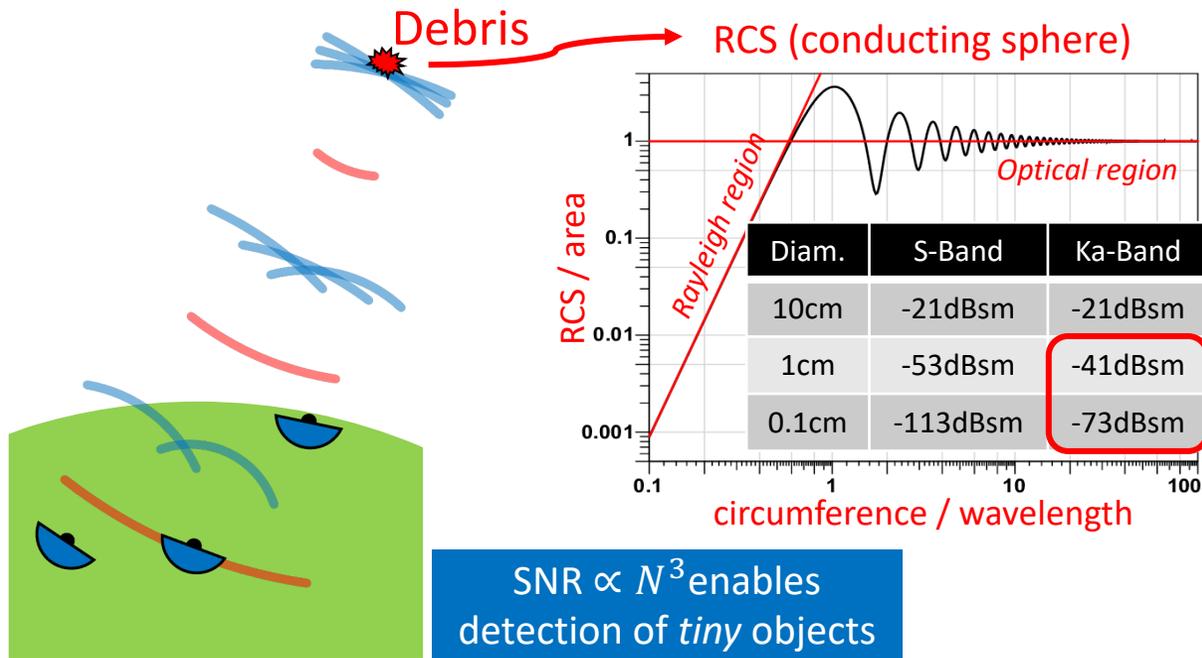
- To make the scientific knowledge and enabling technologies we develop broadly applicable and publicly available
- To eliminate financial and social barriers to education and vocations in the sciences and engineering



SINTRA concepts leveraging Synoptic experience

Coherent Ka-Band Distributed Radar

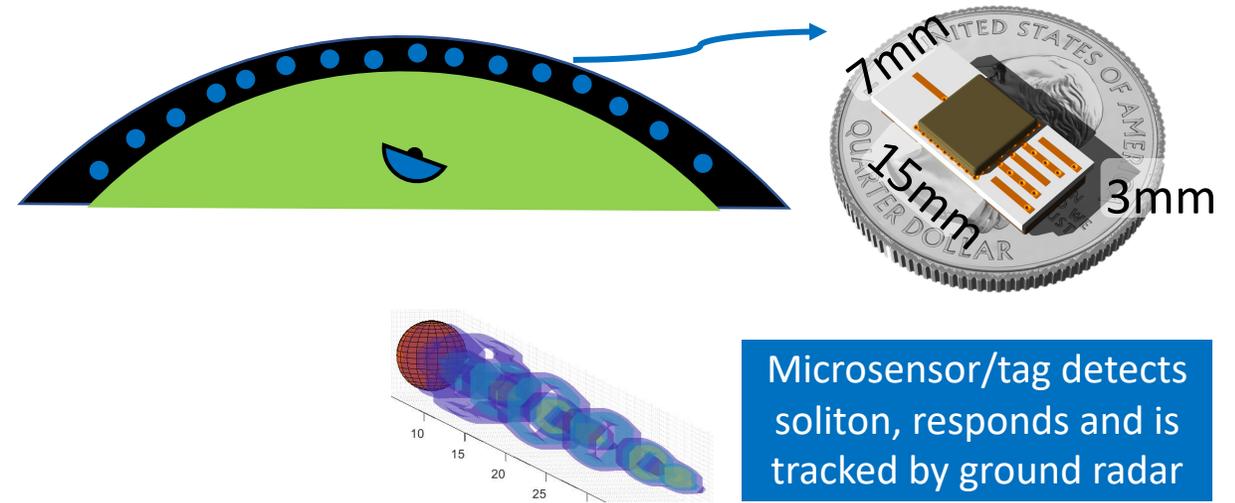
Coherent transmission and reception across distributed ground radar array enables very low RCS debris to be detected and tracked.



Synoptic researchers have led multiple large DARPA efforts demonstrating distributed transmit beamforming

Microtag-Enabled Debris Soliton Detection and Localization

Distributed field of in-situ acoustic field microsensors in LEO detect debris soliton in ionosphere, use radar responsive microtags for localization & tracking



Synoptic researchers have demonstrated a radar responsive microtag detectable at >2000km